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Feasibility Study Report

Introduction

For our project, the Beacon Museum System, we had to consider a number of things for our feasibility study in order to be able to move forward and continue our work on creating a functional application. We had to ensure that data from Parse was able to be retrieved for the iOS and Android applications, as well as the website for clients. We also had to be sure that the beacons were configured correctly, and users' mobile devices would be able to recognize beacons in close proximity. In addition, we had to create the structure for the web application that would eventually allow museum staff to log in and manage the museum's templates and data. To accomplish these tasks, we organized a meeting to talk about what, specifically, we needed to achieve to prove our project feasible. After identifying the areas we would need to consider, we discussed our specific strengths, weaknesses, and areas we would like to work on. Given these considerations, we were then assigned tasks that correlated with our experience and aspirations.

Division of Labor

Carlton

Carlton was assigned to work on the Android application. He was assigned to this portion of the project because he was interested in doing Android development and has quite a bit of experience with Java. For the feasibility study, he was responsible for creating a demo application for Android that changes the background color based on the closest beacon. The most difficult part about the demo app was getting everything configured properly in Android Studio and getting his phone set up to deploy the app.

Mike

Mike was responsible for developing the iOS prototype app that had both iBeacon and Parse functionality built in. He is taking on the iOS side individually due to his experience in iOS and his expressed interest in developing the iOS version. There were not many hangups with developing the small prototype for iOS, with the exception of the fact that Xcode switched to using Swift 2 which broke a lot of the code a couple days before the presentation, though he was able to go through and fix it.

Gina

Gina was assigned to work on the Android application. The reason she was assigned this section is because she would like to learn mobile development, as she does not have prior experience in this domain. For the feasibility study specifically, she was assigned to create a Parse database and retrieve information to be displayed on the application.

Dan

Dan was responsible for testing how JavaScript interacted with a Parse database, which will hold the information about a museum's works of art. He was assigned to this responsibility as he expressed interest in both data management and strengthening his scripting and database management skills. The JavaScript tests included the standard Create, Read, Update, and Delete functionality needed in database management. Due to a general preference in the group for JavaScript, it was chosen over other options as the scripting language. The most difficult aspect of this part of the feasibility study was figuring out how to properly query the database for the desired information.

Matt

Matt was responsible for investigating and setting up the architecture for the supporting web application on the backend of the overall technology stack. The main pieces that were needed for this section were a language, framework, or technology for the server side of the webapp, as well as a hosting and data storage solution. This required significant research into different options, and concluded with Go (Google's programming language) being selected as the server-side technology, hosted on Google Appengine. This solution provides us with sufficient data storage for the small amount of user data we'll need as well as hosting with easily scalable traffic capabilities. Additionally, the speed of Go (which compiles down to C) along with its built-in concurrency and http package make it ideal for our custom backend purposes.

Work Policies

- Each team member is expected to work roughly 6-9 hours on the project per week.
- JIRA will be used for project management. At the start of each sprint, each team member will be assigned tasks that need to be completed by the end of the sprint.
- Source code will be pushed to our Git repository when each task is reasonably complete. Severely broken code should be fixed prior to pushing it to Git.
- Integration will be continuous. We have a weekly meeting set up to touch base with each other and plan out what to do next. We have split off into separate teams that will tackle major components of the project. Teams should be in more frequent communication than once a week to avoid stepping on each other's toes in the code.
- Each commit to Git should be code reviewed by at least one other person. Someone who is experienced with the language/technology being used should review the code with the person who wrote it.
- Each team member will be responsible for thoroughly testing their code before they deem it complete. More extensive testing will be done at a later stage.
- Time / Journal tracking is done within Toggl, and reports are generated to a Journals folder within Github each week.

Backlog of Tasks

BMS-39 Create Login system with Go	Prototyping	8
BMS-35 Test the Javascript Read/Write with Parse	Prototyping	2
~~BMS-34~~ Create Sample Android App that uses Beacons to change screen color	Prototyping	3
~~BMS-37~~ Add Parse to Android App	Prototyping	2
~~BMS-36~~ Create iOS app to interact with beacons	Prototyping	3
~~BMS-38~~ Add Parse to iOS App	Prototyping	2
~~BMS-22~~ App Design	Prototyping	6
BMS-50 Create Parse Database	Database	4
BMS-53 Home Page for Standard Users	Back End	3
BMS-54 Migrate Parse JS to Standard User Homepage	Back End	6
BMS-51 Login Page for Backend	Back End	4
BMS-57 Menu and Wrapper (Android)	Android App	3
BMS-59 Parse Read First Template Info (Android)	Android App	6
BMS-58 Beacon Monitoring (Android)	Android App	5
BMS-60 Menu and Wrapper (iOS)	iOS App	3
BMS-62 Parse Read First Template Info (iOS)	iOS App	6
BMS-61 Beacon Monitoring (iOS)	iOS App	5

Backlog 4 of 11 issues visible Clear all filters Create Sprint

BMS-40 Create Sample Config app to show Beacon info (iOS)	Prototyping	1
BMS-52 Home Page for Admin Users	Back End	
BMS-55 Web Site Design		
BMS-56 Template Design		